## REMARKS

Claims 1, 4, 5, 8-23, and 25-39 are presently pending in the present application. Applicants have amended claims 1, 4, 5, 15-23, 25, 32 and 35, and added new claims 40-44. Claims 8-10, 12, 14, 22-23, and 33 are canceled, thus rendering Examiner's arguments moot. Accordingly, claims 1, 4, 5, 11, 13, 15-21, 25-32 and 34-44 will be pending upon entry of the foregoing amendments. Applicants respectfully request reconsideration of the claims in view of the foregoing amendments and the following remarks.

Applicants have amended the claims to more succinctly claim particular aspects of the invention. Support for the amendments is found in the specification and the original claims. Accordingly, applicants submit that no new matter has been introduced by the amendments.

Claims 4 and 32 were objected to based on informalities. In response to the objections, claim 4 is amended to replace "the a third predetermined angle" with --a third predetermined angle--. Claim 32 is amended to replace "moving the film past third and fourth light sources" with --moving the film past a third light source and a fourth light source--.

Claims 5, 10, and 23 were rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 5, the claim has been amended to replace "system of claim 1" with --system of claim 4--.

The scope conflict between claims 10 and 1 has been remedied by amending claim 1, wherein "detecting non-repeating defects" has been replaced with --detecting defects--.

Similarly, the scope conflict between claims 23 and 21 has been remedied by amending claim 21 to replace "detecting non-repeating defects" with --detecting defects--.

Accordingly, applicants submit that claims 5, 10, and 23 stand in condition for allowance with regard to 35 U.S.C. §112, and respectfully request Examiner's reconsideration.

Claims 1, 4, 5 and 11 were rejected under 35 U.S.C. §102(b) based on United States Patent No. 6,040,584 issued to Liu et al (hereinafter "Liu"). Referring to claim 1, as amended, the claim recites, in part, the following limitations:

> "a first camera configured to ... generate a first image from the first and second portions of light; ...
>
> "a second camera configured to ... generate a second image from the third and fourth portions of light; and
>
> "a signal-processing device operably coupled to the first and second cameras, the signal-processing device configured to provide a summed image by summing the first and second images, the signal-processing device further configured to detect at least one defect in the film based on the summed image."

The Liu reference is directed to a method and system for detecting damaged bills. However, Liu does not teach a first (or second) camera configured to generate an image from first and second (third and fourth) portions of light. Liu in contrast teaches "generating at least one transmitted light image and at least one reflected light image of [a] bill." (Column 14 Lines 57-58). Furthermore, Liu does not teach a signal processing device configured to provide a summed image by summing first and second images generated respectively by first and second cameras. Moreover, Liu does not teach a signal-processing device configured to detect at least one defect in the film based on the summed image, as recited in claim 1, as amended, where the summed image is generated by summing first and second images generated by first and second cameras respectively.

Accordingly, because Liu does not teach each and every limitation of independent claim 1 as amended, and claims 4, 5, and 11, which depend from claim 1, applicants submit that claims 1, 4, 5 and 11, as amended, are allowable over Liu.

Claim 13 was rejected under 35 U.S.C. §103(a) as being unpatentable over Liu in view of United States Patent No. 5,691,811 issued to Kihira (hereinafter "Kihira"). Applicants submit that no prima facie case of obviousness has been established because the proposed combination of Liu and Kihira would destroy the functionality of Liu.

Referring to Liu, the reference is directed to a damaged bill detector utilizing a light detecting device configured to capture the intensity level of light reflected from and transmitted through a bill. Intensity levels from regions of a test bill are utilized directly to create a disorder curve showing a space-intensity relationship. The length of the curve is measured and compared with a curve length similarly derived from a reference bill. Referring to Kihira, the reference teaches use of a slit plate in conjunction with an out-of-focus camera, the camera being defocused "to make the difference between a maximum brightness and a minimum brightness represented by [a] waveform become minimum and flat." (Kihira, Column 3, Lines 19-21). Defocusing the camera blends contrasting light intensity levels that are provided by emitting light through both the slit plate and a normally transparent film in order to provide a flat light-intensity curve for defect-free glass. See Kihira Figure 3. Defocusing the light-detecting device of Liu would destroy the functionality of Liu at least by flattening the curve that reveals light-intensity levels at various coordinates of a test bill and thus rendering inaccurate a measurement and comparison of the length of that curve with a reference bill. In other words, Kihira uses the defocused camera to blend a uniformly light and dark pattern into a uniform reference having a flat intensity curve against which defects in a transparent material will cause a significant change in the intensity curve. If Liu was to employ the same method, Liu's light-detecting device would have to be very defocused in order to produce the uniform reference required by Kihira because the bills being tested are not uniformly light and dark (and may employ several colors). A test bill under the same defocused light-detecting device would also necessarily appear to be substantially uniform and thus indistinguishable from the reference bill.

Applicants therefore submit that, because defocusing the light-detecting device of Liu in accordance with the teaching of Kihira would destroy the functionality of Liu, no motivation to combine the references has been established.

Applicants further submit that a prima facie case of obviousness has not been established because the combination of Liu and Kihira does not teach each and every limitation of claim 13. In particular, Liu and Kihira, alone or in combination, do not teach a signal-processing device configured to detect a defect based on a summed image, the summed image provided by summing first and second images, as recited in claim 1 as amended, from which claim 13 depends. Moreover, the references do not teach a signal-processing device configured to detect a

defect based on the summed image, as further recited in claim 1 as amended, from which claim 13 depends, and wherein the first and second images are respectively generated by first and second cameras.

Claims 15-20, 25-32, 34, and 36-39 were rejected under 35 U.S.C. § 103(a) based on Liu in view of United States Patent No. 5,598,006 issued to Stringa (hereinafter "Stringa"). Applicants submit that a prima facie case of obviousness has not been established by combining Liu with Stringa because that combination would destroy the functionality of Liu.

Referring to Liu, the reference teaches that a single light-detecting device receives light transmitted through and reflected from a portion of a bill. To receive both types of light with a single camera, with regard to a particular portion of material under test, requires that both sides of the portion are simultaneously available for exposure to the two light sources. Stringa, on the other hand, requires that the material under test be kept flat, and proposes to meet the requirement by utilizing superposed conveyor belts, or guiding plates, and a vacuum chamber, the vacuum chamber employed to pull the tested material flat against the conveyor belt and thus exposing only one side of the test material at any given time.

Applicants submit that incorporating the superposed conveyor belt/guiding plate system of Stringa into the defect detection system of Liu would eliminate the ability to detect reflected and transmitted light utilizing a single light-detecting device as taught by Liu. Accordingly, applicants submit that the functionality of Liu would be destroyed by combining Liu with Stringa. Hence, applicants submit that there is no motivation to combine Liu and Stringa, and that no prima facie case of obviousness is established. Accordingly, applicants respectfully submit that claims 15-20, 25-32, 34, and 36-39 are not obvious based on Liu in view of Stringa.

Furthermore, neither Liu nor Stringa, alone or in combination, teach each and every limitation of claims 15-20, 25-32, 34, and 36-39. In particular, neither Liu nor Stringa teach a signal-processing device configured to detect a defect based on a summed image, the summed image provided by summing first and second images as taught by independent claim 1, as amended, from which claims 15-20 depend.

Moreover, Liu and Stringa, alone or in combination, do not teach each and every limitation of independent claim 25, as amended, from which claims 26-31 depend. In particular, neither reference teaches a first camera configured to receive simultaneous transmissive and reflected light together with a second camera configured to receive alternating transmissive or reflected light.

Furthermore, Liu and Stringa, alone or in combination do not teach each and every limitation of independent claim 32, as amended, from which claims 34, and 36-39 depend. In particular, neither reference teaches "emitting light simultaneously from ... first and second light sources onto ... first and second sides, respectively, of a first portion of the film," as recited by claim 32, as amended. Moreover, neither reference teaches "indicating that a repeating defect was detected based on the defect being reproduced at predetermined distance intervals in the film," as recited in claim 32, as amended.

Accordingly, because the combination of Liu and Stringa does not teach each and every limitation of independent claims 25 and 32 as amended, and claims 26-31, 34, and 36-39 which depend from claims 25 and 32, applicants submit that claims 25-32, 34 and 36-39 are allowable over these references.

Claim 21 was rejected under 35 U.S.C. §103(a) as being unpatentable over Liu in view of United States Patent No. 7,030,400 issued to Rivera et al. (hereinafter "Rivera"). Applicants submit that the references do not alone or in combination teach each and every limitation of claim 21, as amended and therefore no motivation to combine has been established.

Claim 21, as amended, recites in part:

"... emitting light from a third light source onto the second side of the light-management film in a second predetermined region of the film;

"emitting light from a fourth light source onto the first side of the light-management film in the second predetermined region of the film;

"generating a second digital image from a third portion of the light reflected from the second predetermined region of film from the third light source and a fourth portion of the light

propagating through the second predetermined region of film from the fourth light source, utilizing a second camera;

"summing the first and second digital images to obtain a summed image; ..."

Liu and Rivera, alone or in combination, do not teach third and fourth light sources, nor a second camera configured to capture images of a second predetermined region of film. In addition, the references do not teach summing first and second images obtained from first and second cameras that respectively face first and second sides of a light-management film at first and second predetermined regions of film.

Accordingly, because the combination of Liu and Rivera does not teach each and every limitation of claim 21, as amended, applicants submit that claim 21, as amended is allowable over these references.

Applicants have added new claims 40-44 to more succinctly claim particular aspects of the invention. Support for the elements of claims 40-43 is found in the specification and the original claims. Accordingly, applicants submit that no new matter has been introduced by claims 40-43.

Applicants note with appreciation Examiner's allowance of claim 33 if rewritten in independent form including all of the limitations of the base claim. Applicants have cancelled claim 33 and added new claim 44 which includes the limitations of independent claim 32 and claim 33. Accordingly, applicants submit that claim 44 is in condition for allowance.

In view of the foregoing amendments and remarks, applicants respectfully submit that the instant application is in condition for allowance. Such action is most earnestly solicited. If for any reason the Examiner feels that consultation with applicants' attorney would he helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below for an interview.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-3621.

Respectfully Submitted,
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